

# **Goldberg's Variations**

*Investigating the improvisational style of Aaron Goldberg*



*Master Research Paper*

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*March 14th 2017*

*Presentation: 12th of April, 10:15-11:15, Studio 3*



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## Introduction

Since the beginning of my bachelor studies at the Amsterdam conservatory in 2009 I have been listening to the music of famous American tenor saxophonist Joshua Redman. I was especially fascinated by his quartets. I was amazed by the first which he was playing with in the early nineties with bassist Christian McBride, drummer Brian Blade and pianist Brad Mehldau which gained a lot of esteem and has become one of the most admired jazz ensembles of the modern era. But, I was at least as struck by his second quartet which consisted of drummer Gregory Hutchinson, bassist Reuben Rogers and pianist Aaron Goldberg. I loved this music for its modern yet hard swinging sound. Being a pianist myself I was automatically drawn to the playing of Goldberg who was playing in a modern sounding, perfectly executed, virtuoso style, all the while retaining a certain warmth and spontaneity which I sometimes missed in other modern jazz pianists. I started investigating his music more and watched youtube clips of him playing over and over. Especially the clip of the Joshua Redman quartet playing Redman's original composition 'Leap of faith' at the jazzfestival in Bern in 2000<sup>1</sup> and the clip of Goldberg playing the standard 'I fall in love too easily' by Jules Styne in a duo with dutch alto saxophonist Joris Roelofs from a concert in the Bimhuis in Amsterdam in 2008.<sup>2</sup>

Although I listened to his music a lot, I didn't really try to transcribe or imitate his playing at that time. In the beginning of my studies I felt that I wasn't ready yet for this kind of advanced playing and I was focusing more on learning jazz fundamentals and studying bebop. When I applied for the master studies at the Royal Conservatoire in 2015 I also didn't immediately think of using him as a subject for my research. My initial idea was to investigate motivic development in jazz improvisation. This subject turned out to be hard to narrow down so then I decided to investigate the motivic playing of a player I really loved but hadn't really checked out yet so much before, the obvious choice was Aaron Goldberg. After talking about this with my research coach Patrick Schenkus I decided to not only write about Goldbergs motivic development but to describe and analyse characteristic elements of his playing style (of which motivic development is one).

Five improvisations of Goldberg are the subject of the research. Devices which are characteristic for his playing will be described and analysed. It contains study of literature and analysis of solo's by Goldberg. The research is limited to five (arrangements of) standards or

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<sup>1</sup> <https://www.youtube.com/watch?v=muRFc7ngrvs>

<sup>2</sup> <https://www.youtube.com/watch?v=wzTOrBCTjSo>

famous jazz compositions from albums where Goldberg functions as a leader. I chose to analyse standards because the chord changes are more or less known and it is a great way to identify the devices Goldberg used over common chord changes. Also it will be easier for me to absorb these devices because I know the repertoire and it will be better doable to use them over other standards as well. This would have been harder with Goldberg's original compositions because they are harmonically more distant from the standard repertoire. The selected solo's are:

1. 'Con alma' (Dizzy Gillespie) from the album *Turning Point* (2001).
2. 'Fantasy in D' (Cedar Walton) from the album *Turning Point* (2001).
3. 'The shadow of your smile' (Johnny Mandel) from the album *Turning Point* (2001).
4. 'Unstablemates' (Aaron Goldberg, Benny Golson) from the album *Worlds* (2006).
5. 'Perhaps' (Charlie Parker) from the album *The now* (2015).

These solo's have been selected because of their harmonic and rhythmic differences. 'Con alma' is played in five/four time, 'Fantasy in D' has influences of modal harmony, 'The shadow of your smile' is a typical jazz standard from the American Songbook, 'Unstablemates' is a hardbop composition and 'Perhaps' is a blues. The central research question is:

How can I emulate characteristic devices from Goldberg's playing style (when playing standards) and apply these to my own playing?

When I started my research I encountered the term 'device' a lot and I decided to use it in my research question. Just to make sure it won't cause any confusion, the term describes a specific musical tool, strategy, concept or technique which a jazz improviser can use while playing a solo. Some examples of these which were also described as 'devices' are enclosure,<sup>3</sup> using specific rhythms<sup>4</sup> and appoggiatura's or arpeggiation.<sup>5</sup>

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<sup>3</sup> Warwick 2017.

<sup>4</sup> Monroe 2017.

<sup>5</sup> Galper 2005.

Analysis of jazz solo's is common since *Downbeat magazine* started publishing these in the fifties. In these analysis different methods were used. The method that I initially used for this research is the method Gary Potter proposed in his article 'Analyzing improvised jazz'.<sup>6</sup> Although this way of analysis was to some use for finding motivic development, I ended up not using this analysis in the research paper. Just the transcription with the characteristic devices highlighted in different colours turned out to be much better for clarity. For this research I will define a 'characteristic device' as follows:

- It occurs in most of the transcriptions.
- The device stands out and attracts attention.

The research paper is divided into chapters. The first chapter is about Aaron Goldberg himself, his life, career and development as a musician and gives background information about the standards which are used in this research. Chapter two, three, four, five and six are about the different characteristic devices in Goldberg's improvisations and where these elements (possibly) originate from. The seventh chapter deals with the absorption of these elements into my own playing and offers some exercises to do so. The conclusion deals with answering the research question and the effects the research had on my own playing. The appendix contains the full transcriptions of the solo's.

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<sup>6</sup> Potter 1990.

## Chapter 1

### Aaron Goldberg

Aaron Goldberg is an American jazzpianist born in 1974 in Boston. He started playing the piano at the age of twelve and got into jazz while he was in high school. He was taught in this period by two famous music teachers and jazz musicians: bassist Bob Sinicrope and saxofonist Jerry Bergonzi. After high school he studied jazz piano in New York at the New School for Jazz and Contemporary Music. He only stayed there for one year. Afterwards he studied 'Mind, Brain and Behaviour' at Harvard university. Here he finished his studies cum laude in 1996. While studying there he played a lot with students from the nearby Berklee College of Music. This is where he met Reuben Rogers, the bass player who plays on most of his trio recordings. After graduating, Goldberg played with numerous famous jazz artists such as: Mark Turner, Joshua Redman, Betty Carter, Kurt Rosenwinkel, Wynton Marsalis and Madeleine Peyroux.<sup>7</sup>

As a leader he produced the album *Turning point* (1990), followed by *Unfolding* (2001), *Worlds* (2006), *Home* (2010) en *The now* (2015). His playing style is often described as virtuoso, modern, deeply rooted in the jazz tradition and harmonically advanced. He has been influenced by modern jazz pianists such as Herbie Hancock and Chick Corea. Influences from hard bop pianist such as Red Garland and Wynton Kelly are also apparent next to the influence of his contemporary: Brad Mehldau.<sup>8</sup>

### Con Alma

'Con Alma' is composed by trumpeter Dizzy Gillespie, the piece was first recorded in 1955 for his album *Afro*. The composition mixes elements of bebop and latin-American music, a fusion which is quite common in the compositions of Gillespie.<sup>9</sup> The tune has an A, A, B, A form and contains a complex harmonic structure in the A-parts in which four tonal centres alternate each other (E, Eb, D flat and C major). The original is written in a 12/8 time signature. The melody is relatively simple and consist of a lot of long notes. The recording of Goldberg comes from his first album as a leader, *Turning point*, recorded in 1999. Goldberg arranged the piece for piano trio and made some significant changes. The most striking difference is the change of the time signature to 5/4 time. In

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<sup>7</sup> Goldberg 2015.

<sup>8</sup> I asked Goldberg about his influences after a concert in 2013 in the Bimhuis in Amsterdam with the Joshua Redman quartet.

<sup>9</sup> Dryden 2016.

the A-parts he also added a bass line played in unison by piano and bass which complements the melody.

### **Fantasy in D**

The piece 'Fantasy in D' is composed by jazzpianist Cedar Walton. The tune is also known under the name 'Ugetsu', the Japanese word for fantasy. It appeared first on the 1963 live album *Ugetsu: Art Blakey's Jazz Messengers live at Birdland*. Walton was the pianist of the Jazz Messengers and wrote the composition for this group.<sup>10</sup> The form of the composition is quite unusual, it contains an A- part which exists out twenty-four bars with a lot of fast changing harmonies and a B-part which exist out of sixteen bars over only a pedal point. The B-part has no written melody and the section is also used as an intro. The melody of the A-part is accompanied by syncopic accents played by the rhythm section. Goldberg's version appeared on his album *Turning Point*. The melody is performed by a rather uncommon combination of instruments, Carla Cook scats the melody in unison with melody played by the tenor saxophone of Mark Turner. Except for the different instrumentation, Goldberg's arrangement is the same as the original by Walton.

### **The shadow of your smile**

'The shadow of your smile' was written by Johnny Mandell with lyrics by Paul Webster for the movie *The sandpiper* from 1965. Mandell and Webster were rewarded with a Grammy (for song of the year) and Academy award (for best original song) for the song. Mandell's musical career started as a trombonist in the famous bigbands of Count Basie, Woody Herman and Buddy Rich. Over the years he developed himself more as a composer and arranger and some of his songs (like 'The shadow of your smile') are now part of the standard repertoire (the American songbook so to say). The song has been recorded extensively, some famous versions of the song are by Frank Sinatra, Tony Bennet and Barbra Streisand.<sup>11</sup> Golberg's recording is from the album *Turning point*. In his arrangement the melody is performed by the tenor saxofonist Joshua Redman while the rhythm section accompanies him with a composed bass line (played by piano and double bass in unison) and multiple rhythmic accents. The improvisational part is mostly over the original 32 bar form and chord changes, only the last chords of the harmony is changed from the tonic to the major seven chord of the flat second degree.

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<sup>10</sup> Staff 2016.

<sup>11</sup> Janovitz 2016.



## **Unstablemates**

‘Unstablemates’ is an arrangement by Goldberg of the 1955 composition ‘Stablemates’ by Benny Golson. Golson wrote many compositions that ended up being part of the standard jazz repertoire. Especially the tunes he wrote between 1958 and 1959 for Art Blakey and the Jazz Messengers became famous. His compositions are examples of the hard bop jazz style. His compositorial style is known for its singable melodies accompanied by quite complex harmonic changes.<sup>12</sup>

‘Stablemates’ has an A, B, A form in which the A part is fourteen bars and the B part is eight bars long. The song has a swing feel, only in the last four bars of the A parts the feel changes (in most recordings) to latin. Goldberg’s version of the song is from his album *Worlds* from 2006. The changed song title ‘Unstablemates’ refers to the arrangement by Goldberg. In this arrangement, the original melody is hard to find because of all the rhythmic accents which give this version an unstable feel. Goldberg calls this arrangement a: “[...]respectful de-rangement[...].”<sup>13</sup> The improvised part however, is over the original chord changes.

## **Perhaps**

The blues ‘Perhaps’ is composed by Charlie Parker and was first recorded on September 24th 1948 in the Harris Smith studio in New York (Charlie Parker All-Stars consisting of Miles Davis on trumpet, John Lewis on piano, Dilton ‘Curley’ Russell on bass and Max Roach on drums). With its improvisational like quality it is a typical example of a bebop melody. It was Parker’s last recording for Savoy records. These last recording sessions on September 18th and 24th were scheduled despite a recording ban which was in place at that time by the American Federation of Musicians, the union for professional musicians.<sup>14</sup> Goldberg’s recording of the song is on his album *The now* from 2014. On this recording he plays the head of the composition in a distinct way. The melody is played with his right and his left hand, only the left hand starts with the melody a quarter note later which gives a canon like effect.

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<sup>12</sup> Piras 2016.

<sup>13</sup> Goldberg 2016.

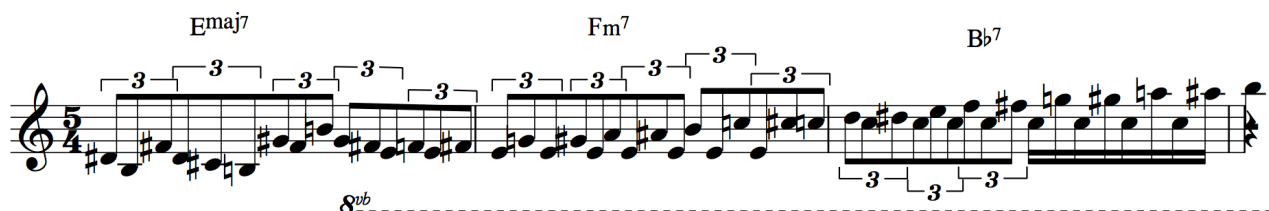
<sup>14</sup> Creative commons 2017.

## Chapter 2

In the following chapters certain devices that Goldberg uses in the transcribed solo's will be discussed. It won't be possible to describe every device and technique Goldberg uses, the research will be limited to describing the ones he uses all the time and that really stand out and are therefore in my opinion characteristic for his playing style. Having said that, these devices aren't only used by Goldberg, also other pianist and improvisers use them as they come forth out of the jazz tradition. However, the combination of these devices is unique in Aaron Goldberg's playing and he uses them in his own special way.

### Chromatic runs returning to one note.

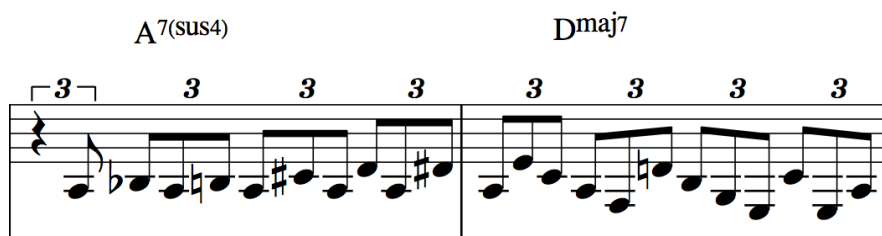
This is a particular device which Goldberg uses in every transcribed solo with the exemption of 'The shadow of your smile' and attracts a lot of attention during his improvisations. He starts his phrase on one note which he uses as a pivot point after which he plays the note a half step higher and returns to the first note again after which he plays a note a whole step higher and continues this way chromatically. I will give examples from all (but one) solo's. On first sight one could argue this device is only a trick which he uses to show off his virtuosity. However when you take a closer look at all the examples from the solo's you will see that Goldberg always uses it in a different way and is able to combine this device with other types of phrases. In combination with the fast speed at which he uses this device (almost always in eighth note or sixteenth note frases) and the freedom he has attained in combining this with other devices all the while using it over complex harmonic progressions (while still ending on strong target notes) I would argue it is a spectacular device (which also sounds really good!).



Ex. 1

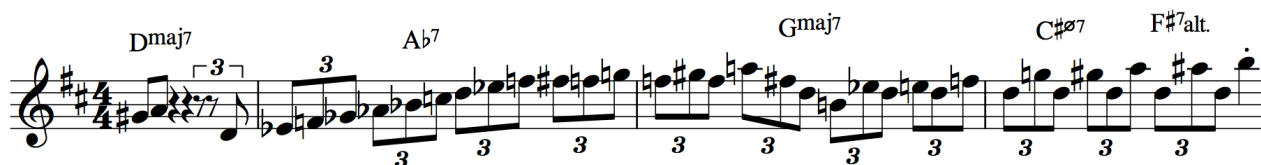
In example 1 from bar 22-24 from his solo on Con Alma Goldberg uses this device in a eighth note triplet rhythm over a 5/4 meter. He also changes the pivot note in bar 23 (from E to C) as he continues upwards.

In the examples that go with 'Fantasy in D' the key signature isn't always visible, the song is written and played in the key of D major. In his solo on 'Fantasy in D' he uses this particular device extensively. It occurs for the first time in bar 46 (ex. 2) where he uses it in a eighth note triplet rhythm after which he continues his phrase differently.



Ex. 2

In bar 61-64 (ex. 3) of this solo Goldberg uses this device again in a eighth note triplet rhythm in combination with a line in bar 62 from the scale and a downward arpeggio in bar 63.



Ex. 3

In bar 79-80 (ex. 4) the device appears again in a eighth note triplet rhythm. The notes he is using in bar 80 are clashing with the harmony but this isn't a problem because he resolves in bar 81 to a strong chord tone (the A, the fifth of the D major seven chord).

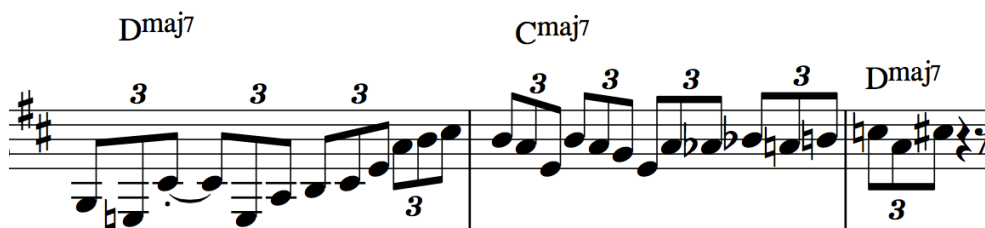


Ex. 4

In bar 107-111 (ex. 5a and 5b) the device is played in combination with downward arpeggio's and an ascending pattern in bar 109. This is a good example of the way Goldberg can combine this device with other types of phrases.



Ex. 5a



Ex. 5b

In bars 95-101 (ex. 6) of his solo on ‘Unstablemates’ Goldberg is developing the device in a motivic way. He starts off with the note he returns to repeated in a sixteenth rhythm over one bar, then pauses for an eight note and then repeats the phrase. He then moves the figure up in sequences. At the end he combines this device with another device he uses a lot, four note arpeggio’s played in a eight note triplet rhythm.



Ex. 6

In his solo on ‘Perhaps’ Goldberg uses this device also in a somewhat different way. In bar 108-115, instead of ascending chromatically, he is ascending diatonically within the scale of C major. In 117-118 he is using the same idea but now diatonically played within the Ab dominant scale (ex. 7). Although this is technically not a chromatic run returning to one note, the shape of the played figure still has a lot in common with the other examples and sounds a lot alike.

Ex. 7 is a musical score in treble clef, spanning measures 106 to 118. The key signature has one flat (B-flat). The score features several chords: Dm7, G7, C7, F7, and Ab7. It includes multiple triplet markings (indicated by a '3' over a bracket) and an octave extension marked '8va' with a dashed line. The melody is composed of eighth and sixteenth notes, with some rests.

Ex. 7

In bar 174-175 (ex. 8) Goldberg is using the device within a short range, not going higher than a perfect fourth from the starting note. He is emphasising the minor third which gives this phrase a bluesy character.

Ex. 8 is a musical score in treble clef, spanning measures 171 to 175. The key signature has one flat (B-flat). The score features chords F7, C7, and D7. It includes triplet markings (indicated by a '3' over a bracket) and an octave extension marked '8va' with a dashed line. The melody is composed of eighth and sixteenth notes, with some rests.

Ex. 8

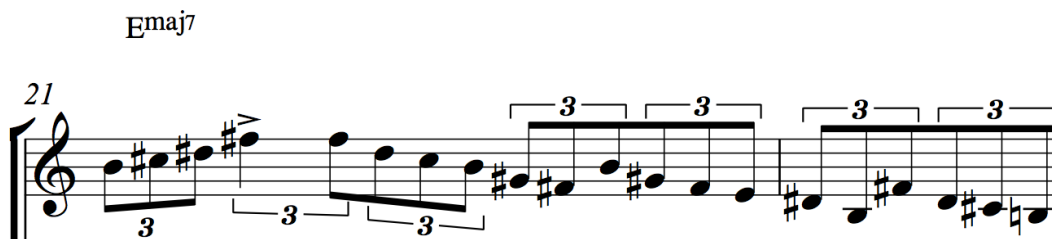
Goldberg isn't the inventor of this particular device, I have found some other examples of pianists using this technique as well. Kenny Kirkland uses it in his solo on the Cole Porter song 'Night and day' (minute 2:15) from a 1987 album entitled *Night and day* by singer Carmen Lundy. Also Brad Mehldau is using it, for instance in his solo on his original composition 'Ron's Place' (minute 2:55) from his album *The art of the trio vol. 1* from 1997. It is very well possible that Goldberg heard this device being played by one of these pianist and took it from them. Goldberg does uses it more extensively in his playing than these other pianist and he has more ways of varying with it. In the transcriptions in the appendix, this device is highlighted in green.

## Chapter 3

### Arpeggio's over the bar line

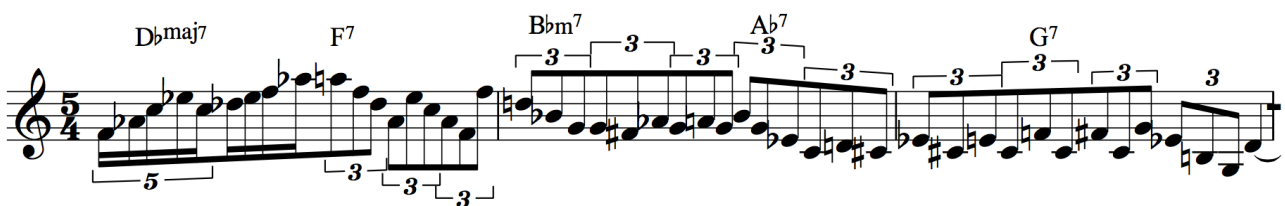
Another device Goldberg is using all the time is the playing of arpeggio's 'over the bar line'. Which this device Goldberg creates cross-rhythms by playing arpeggio's with a fixed number of notes that don't fit within the underlying metre. This causes the accent to change which gives a typical rhythmic effect. Again, I will give some examples from the transcriptions. In the transcriptions in the appendix this device will be highlighted in red.

Starting in bar 21 of his solo on 'Con Alma' (ex. 9) Goldberg is playing six note arpeggio's with a triplet rhythm in a descending motion. The accent changes from the third triplet of the second beat to the third triplet of the fourth beat to the third triplet of the first beat of the next bar.



Ex. 9

In this improvised phrase in bar 29-31 (ex. 10) Goldberg is combining the device of the chromatic runs returning to one note with the arpeggio's over the bar line. He starts of with a descending four note arpeggio in a triplet rhythm, plays two different descending arpeggio's with the same rhythm after which he continues with an ascending chromatic run after which he ascends again with a chromatic run. He finishes the phrase with a descending arpeggio over the bar line. This combination of the two devices is quite uncommon and a hallmark for Goldberg.



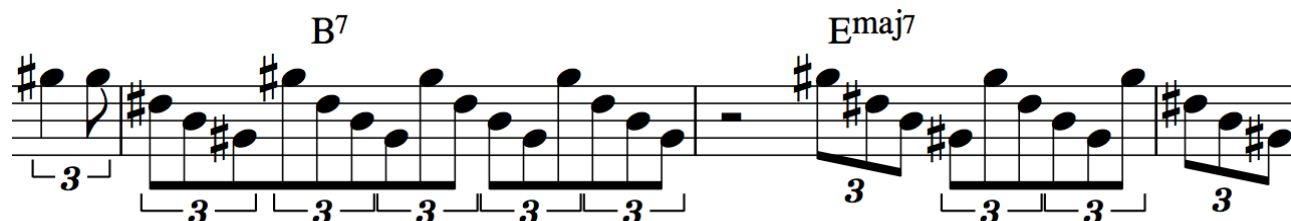
Ex. 10

In bar 46-47 (ex. 11) Goldberg is using a four note arpeggio with a leading tone creating a five note shape played in a sixteenth note rhythm which creates a cross-rhythm.



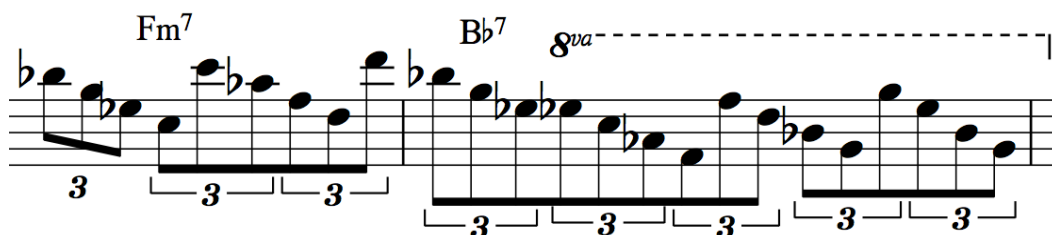
Ex. 11

In bar 52-54 (ex. 12) Goldberg is using a four note arpeggio in a triplet rhythm.



Ex. 12

In bar 55-56 (ex. 13) Goldberg plays a descending four note arpeggio in a triplet rhythm which he plays in a sequens in an ascending motion.



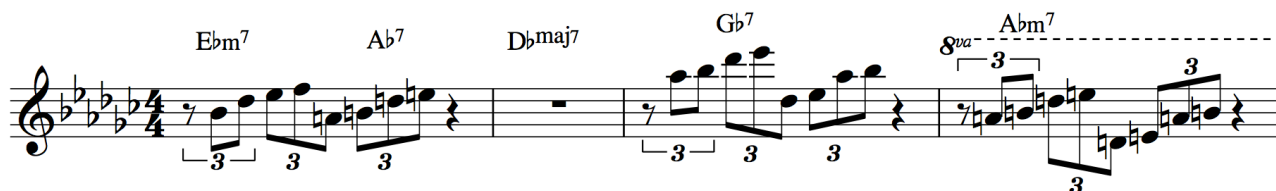
Ex. 13

In bar 85-87 (ex. 14) Goldberg is using the four note arpeggio in a triplet rhythm again, at the end of his phrase he adds a second voice a tenth below the upper voice, further described in chapter five.





In bars 60-63 (ex. 17) of his solo on 'Unstablemates' Goldberg is playing four note patterns, not really arpeggio's but similar, in a triplet rhythm. Interesting here is that he is playing this phrase in unison with his left hand. The notes from the patterns are sometimes really outside of the harmony.



Ex. 17

In bar 132-133 (ex. 18) of his solo on 'Unstablemates' Goldberg is ending a phrase with this device (example 18 only shows the end of the phrase), again a four note pattern played in a triplet rhythm.



Ex. 18

This device occurs for the first time in Golberg's solo on 'Perhaps' in bars 103-105 (ex. 19). Again a four note pattern played in a triplet rhythm. Here he is using triad arpeggio's in different inversions with one chromatic note leading to the top note of the played inversion. The triads which are played are C/G, Ebm/Gb, Bb/F and A/E.



Ex. 19

In bars 135-138 (ex. 20) he plays different four note patterns in a triplet rhythm once more.



Ex. 20

The use of arpeggio's to create cross-rhythms isn't invented by Goldberg, in fact it is a commonly used device throughout the history of jazz. Pianists like Lennie Tristano and Bill Evans, just to name a few, are also very much known for using this. For instance in Evans's recording of 'All the things you are' and in Tristano's recording of 'Line up'. (*nog even opzoeken met linkje erbij etc.*) This device is a big part of Goldberg's improvised style, so therefore it was important to describe the way he is using it. The combination of the chromatic runs returning to one note and the arpeggio's over the barline (ex. 10) is quite unique, I haven't found an example of any other pianists combining the two in this particular way.

## Chapter 4

### Motivic development

This is a more complicated subject and thus requires some explanation. A motif can be defined as a short melodic, harmonic or rhythmic musical idea (or a combination of these three).<sup>15</sup> In jazz as well as in other musical genres it has another important quality, it gives a sense of unity to a section of, or even to an entire composition. In jazz improvisation motivic development is an important tool. Duke Ellington wrote in his 1958 essay ‘The future of jazz’:

‘It is my firm belief that there has never been anybody who has blown even two bars worth listening to who didn’t have some idea about what he was going to play, before he started .... Improvisation really consists of picking out a device here, and connecting it with a device there; changing the rhythm here, and pausing there; there has to be some thought preceding each phrase, otherwise it is meaningless.’<sup>16</sup>

In line with Ellington’s thoughts an improviser needs some sort of strategy for playing a solo. Roughly speaking there are three strategies jazz improvisers use. The first is paraphrase improvisation with which the improviser uses the original theme of the song to vary on and create a solo. The second is formulaic improvisation which is the use of pre-studied melodic patterns to create a solo. The third strategy is the use of motivic development. With this technique an improvised motif is developed or varied through such processes as ornamentation, transposition, rhythmic displacement, diminution, retrograde, augmentation and inversion.<sup>17</sup>

It can be hard sometimes to make a distinction between the three strategies because there can be some overlap. A well know jazz lick could be developed as a motif as well, the question rises if this is motivic or formulaic improvisation. To solve this problem I thought of some criteria a part of the transcribed solo has to meet in order to be called motivic: there has to be a short idea that catches the attention of the listener, there has to be some form of repetition with or without development and there has to be a very clear connection between the initial idea and what follows afterwards.

As before I will give some examples. In the transcriptions in the appendix, sections that contain motivic development will be highlighted in blue.

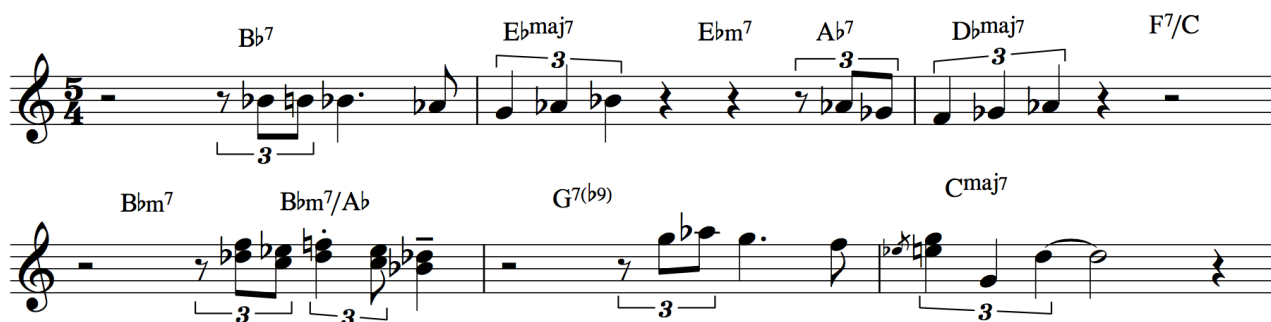
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<sup>15</sup> Drabkin 2017

<sup>16</sup> Green 2008.

<sup>17</sup> Nettl. 2017

The first example (ex. 21) is from bar 3-8 from Goldberg's solo on 'Con alma'. Goldberg is developing a motif he derived from the original melody. I would argue this is motivic improvisation and not paraphrase improvisation because of the typical motivic way he develops this idea. He plays his initial idea in bars 3-4, develops it by playing it a major second lower with a different start in bars 4-5, plays it in a higher register in inversion with a little rhythmic variation in bar 6 and finishes the phrase even higher with a little melodic variation.



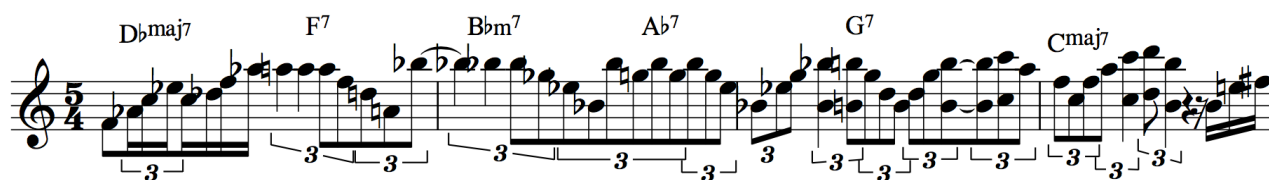
Ex. 21

In bars 35-41 (ex. 22) Goldberg is developing a motif consisting out of a descending triad in different inversions which he approaches in different ways. The first descending triad occurs in bar 36, the second and third in bar 37, the fourth and fifth in bar 37 and the sixth in bar 41. Although Goldberg approaches the triads in really different ways, this part of his solo sounds really connected because of the use of this motif. The phrase actually continues in bar 41 but for reasons of clarity these notes are left out of the example, for the full phrase see the appendix.



Ex. 22

From the third beat in bar 61 Goldberg is developing a motif that consist of a repeated high note followed by a descending arpeggio. He develops this motif by repeating it higher after which he starts alternating the high note with another note a minor third lower. At the end of the phrase he also adds an ascending arpeggio and diminishes the rhythm of the motif (bars 61-64, ex 23).



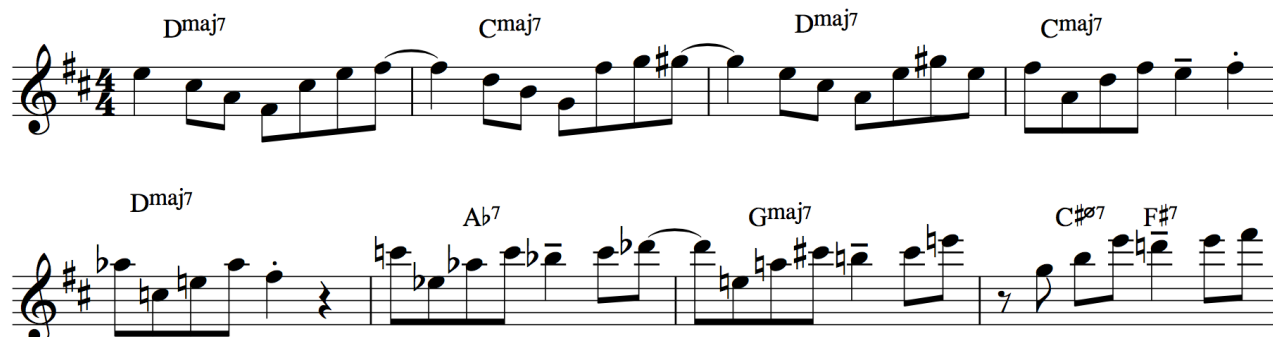
Ex. 23

In bars 17-20 (ex. 24) of his solo on 'Fantasy in D' Goldberg is developing a motif that consists of an ascending arpeggio followed by a descending perfect fourth. He is developing the motif by playing it in sequence a major second lower in bar 18. In bars 19-20 he is developing the initial motif in multiple ways. He changes the starting point of the motif to the third beat of the bar, he changes the melody by altering the final interval from a perfect fourth to a minor third (which creates tension because he is changing the harmonic rhythm) and immediately plays the motif in a sequence a major second lower afterwards.



Ex. 24

The motivic development in bars 97-104 (ex. 25) consist out of two interconnected parts. In bars 97-99 he develops a one bar motif by playing it in a sequence. Then he continues with a motif that has a strong connection to the first motif because of it's shape, it also has three ascending notes at the end. He continues developing this motif in an ascending sequence as well.



Ex. 25

For the entire last sixteen bars of his solo (120-136 ex. 26) Goldberg is developing a simple five-note motif. He repeats the motif a perfect fifth higher, after which he plays the motif an octave higher. He continues by playing the motif diatonically a perfect fourth lower but changes the melody by ending on the sharp eleventh of the D major seven chord. In bar 130 he repeats the motif a perfect fourth lower and ends on the tonic after which he expands the motif with one extra note and plays it diatonically a major second lower. He repeats this expanded version of the motif a perfect fourth lower and ends on the sharp eleventh of the D major seventh chord once more. A remarkable feature of this passage is the almost complete lacking of rhythmic development.



Ex. 26

The first example of motivic development in Goldberg's solo on 'The shadow of your smile' happens in bars 15-19 (ex. 27). Goldberg uses chromatic and diatonic enclosure of strong chordal tones and develops this pattern as a motif by playing it in and ascending sequence. In bar 19 he plays a phrase which has a strong resemblance to the last enclosure which gives this phrase a strong connection to what was played before.



Ex. 27

In bars 73-80 (ex. 28) Goldberg is developing a remarkable motif that doesn't really have a lot of similarities with more common jazz vocabulary. It consists of a repeated large intervallic leap after which the motif ends with a note somewhere in between. He develops the motif by playing it in a sequence and displacing it rhythmically.





Ex. 28

Goldberg begins his solo on 'Unstablemates' in bar 3-12 (ex. 29) with the development of a motif. He manages to develop this idea masterfully through quickly changing harmonies. The motif is developed through sequence. The intervals between the different notes of the motif change but the overall shape stays the same, which makes the different parts of the development sound connected.



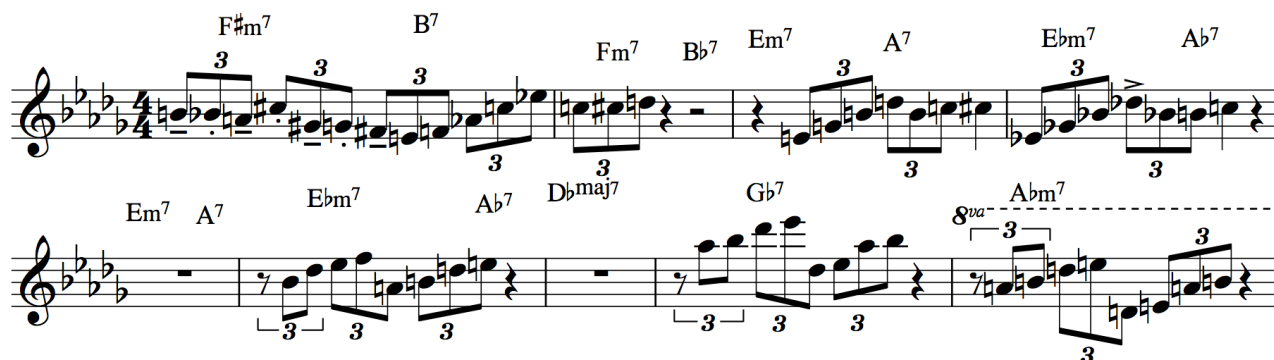
Ex. 29

In bars 35-43 (ex. 30) Goldberg is using the last three notes of the phrase he played in bars 35-36 as a motif which he continues to develop. He is mainly expanding the motif by adding more notes, the basic motif stays the same.



Ex. 30

In bars 55-63 (ex. 31) Goldberg is again using the last part of the phrase played in bars 55-56 to develop as a motif. This phrase is a typical jazz two-five lick. He repeats it in a sequence fitting with the underlying harmonies in bars 55-56 and 57-58. In bars 60 he moves away from the lick but plays a phrase with almost the same shape. He repeats this new shape in a different form two times more. In these phrases Goldberg is using a lot of outside notes, but it still sounds connected to the previous motif because of the similarity of shape.



Ex. 31

Goldberg starts his solo on the blues 'Perhaps' with the development of a motif (ex. 32). He plays a motif that consists of a perfect fifth in descending motion and lands on the C. He develops this idea by landing on the C again only now by an ascending minor third, and again with a major second. After this he plays an extended version of the very first motif, again landing on the C. He continues with a version of the third motif only now played in a sequence landing on F, which is followed by a bluesy phrase landing on C again. The final phrase of this section is again encircling the C. The fact that Goldberg is making C the most important note gives a sense of connection to these bars. Also the use of the same rhythm, an eighth note followed by a longer note, is a factor that contributes to this.



Ex. 32

In bars 37-41 (ex. 33) Goldberg is playing two phrases that start differently but end on the same motif played in a sequence. The last four eighth notes that approach the first motif are repeated in a varied inversion before the appearance of the second motif, this also gives a sense of connection to the two phrases.



Ex. 33

In bars 65-68 (ex. 34) Goldberg is using a similar technique to develop a motif. He approaches the motif played in bar 66 in a different way than the same motif played in a sequence in bar 68.



Ex. 34

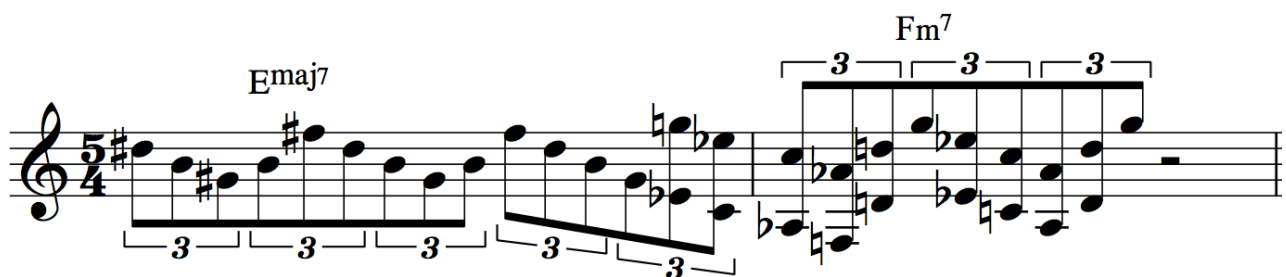
There are some strategies that keep returning when Goldberg is using motivic development. First of all, Goldberg uses a lot of sequences. His main tool for motivic development is playing a motif and shifting it through the scale in a sequence. A strategy that is connected to this is that he plays a phrase which ends on a motif after which he plays a completely different phrase which ends on the same motif in a sequence. What's also interesting is that Goldberg uses a lot of arpeggio's as note material for his motifs.

## Chapter 5

### Lines in intervals

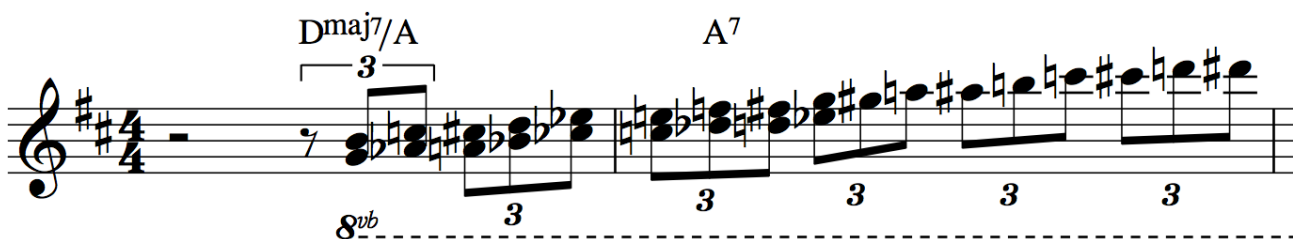
Lines played by two hands in intervals is a device that Goldberg uses on a regular basis. The basic idea is that the right hand plays an improvised line or pattern and the lefthand plays the same shape a certain interval below it. Goldberg likes to use different intervals to do this, mostly the third, sixth or tenth. This device is used a lot in a diatonic way, so the interval is never all the time a major third or a major sixth, it follows the scale which is used. In the transcriptions this device is highlighted in pink.

Goldberg uses this device in his solo on 'Con Alma' once in bars 86-87 (ex. 35). He plays a phrase in which he uses the device of arpeggio's over the bar line, and at the end of the phrase starts doubling the played phrase with his left hand a diatonic tenth lower.



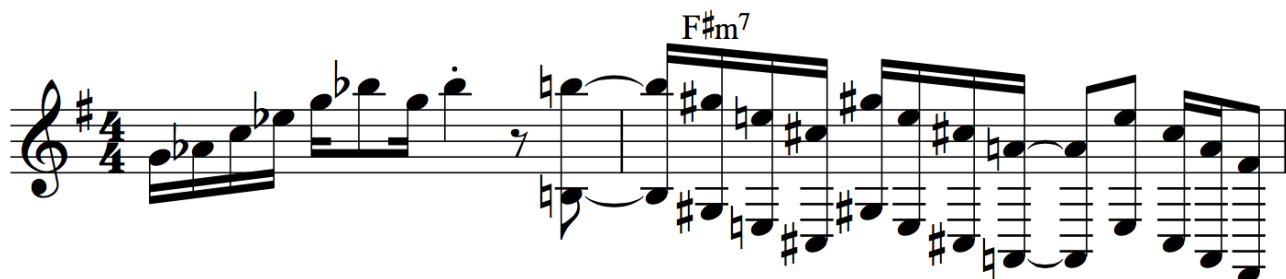
Ex. 35

Also in 'Fantasy in D' Golberg uses this device once. In bars 95-96 (ex. 36) he plays a chromatic scale with two hands a major third apart.



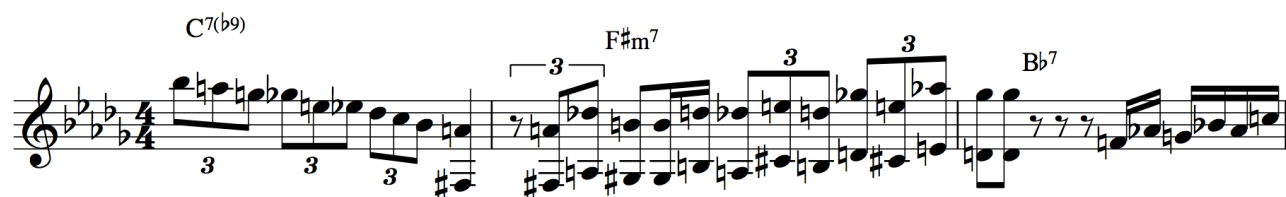
Ex. 36

In bars 65-66 (ex. 37) of his solo on 'The shadow of your smile' Goldberg is using this device in a more traditional way, by playing the same phrase in unison with the lefthand two octaves lower.



Ex. 37

On 'Unstablemates' Goldberg plays an ascending phrase with his right hand and doubles this phrase a diatonic tenth lower with his left hand. This happens in bars 102-104 (ex. 38).



Ex. 38

In bars 53-56 (ex. 39) of his solo on 'Perhaps' Golberg plays two phrases in thirds. The first one is a diatonic run, using both minor and major thirds. With the second he uses the octotonic scale which is a symmetrical scale, therefore the interval stays a minor third.



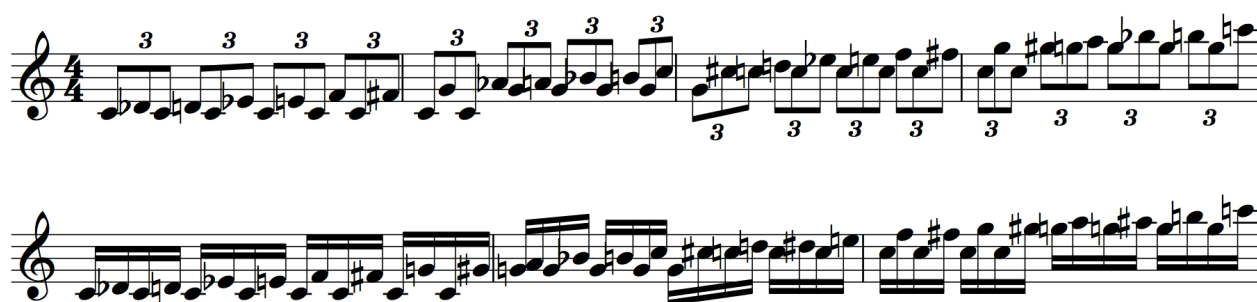
Ex. 39

Playing lines with two hands is also a well known device from the jazz piano tradition. Pianists like Oscar Peterson and Bill Evans (for instance on Miles Davis' 'Solar' on Evans' live album *Live at the village vanguard*) have used this quite a bit. They mostly play the same improvised melody in unison with two octaves in between. Goldberg isn't doing this so much, he mainly is using other intervals like thirds or tenths. He also doesn't do it for a long time, he uses it more as an effect. If he uses it it happens at the end of a longer one hand phrase or for just a short while.

## Chapter 7

### Exercises for chromatic runs

To be able to use the chromatic runs returning to one note freely in my own improvisations I thought of a number of exercises. The first one is playing the chromatic runs in an ascending motion and changing the note where the run starts on the root and on the eighth note of the chromatic scale. This is quite similar to what Goldberg does in example one. This exercise can be done in an eight note triplet rhythm or a sixteenth note rhythm which Goldberg both uses. It can be practised starting on all keys, starting on a black key will give more technical difficulties than starting on a white key. After mastering the exercise in different tempo's, it is also good to practice changing from triplet to sixteenth note rhythm in the middle of a phrase, as Goldberg is also doing that in example one.



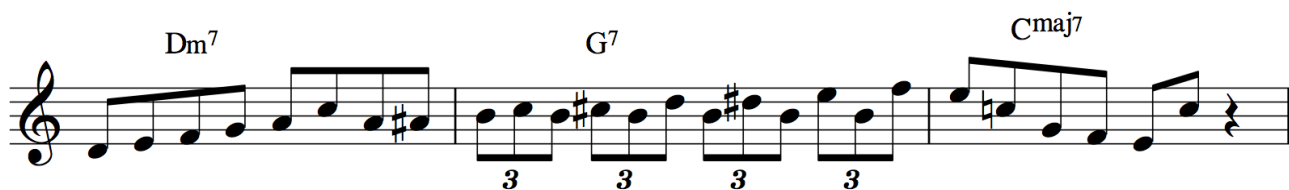
#### *Exercise 1*

Aaron Goldberg also likes to use this device in combination with arpeggio like runs. To be able to use that in my playing I thought of the following exercise. It has to be seen as being played over a certain scale, I will use the major scale for now. One plays the chromatic run in an eight note triplet rhythm up to the fifth of the (in this case) major scale and then plays two descending four note arpeggio's. You will land on the fifth note of the scale and start playing the chromatic run up to the ninth of the scale after which you will play three descending arpeggio's landing on the root. This pattern can be repeated over multiple octaves. It can be practiced in all keys and also using other scales like the minor melodic scale.



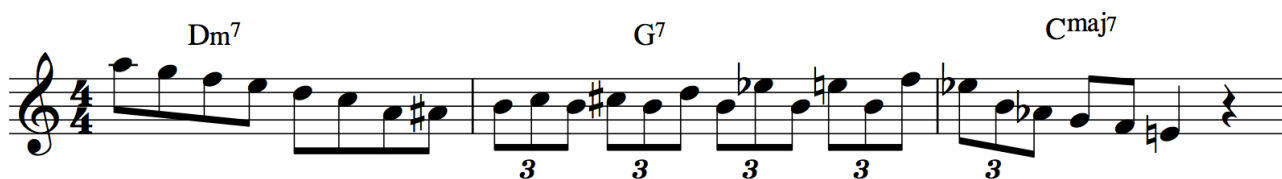
#### *Exercise 2*

To be able to play this device over chords changes I thought of an exercise over II-V-I progressions in which I improvise a phrase consisting of eight notes that lands on the third of the dominant chord on the first beat of the bar. On this third I start the device which I try to resolve in an improvised way in the next bar. The examples below are all in C major, of course this has to be practised in all keys to be able to use them fluently over different tunes.



### *Exercise 3*

I also tried to not directly resolve my phrase on the first beat of the tonic, because this is also something Goldberg tends to do.



### *Exercise 3*

I've also practised starting the device on the subdominant and improvise the rest of the phrase.



### *Exercise 3*



And playing a phrase landing on the fifth or the third of the tonic and starting the device from there.



### Exercise 3

With this exercise one can vary and therefore practice endlessly using this device over different chords changes, the ones shown are only II-V-I progressions in major, you can do the same for minor II-V-I's or for different common or uncommon chord changes.

### Exercises for the arpeggio's over the bar line

To think of useful exercises for the arpeggio's over the bar line I had to make an distinction between the different groupings Goldberg uses in the given examples. The first exercise is for triplets in groups of four. This exercise is actually quite basic and I'm sure a lot of jazz pattern books offer this as well, nevertheless it is an exercise that has to be mastered in order to get a firm grip on these kind of patterns. The exercises shown are again in the key of C major but will have to be played in all keys and also using different scales.



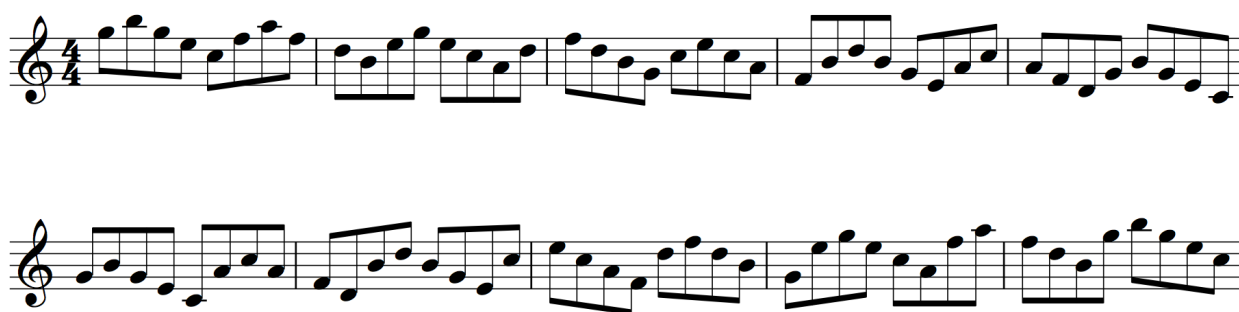
### Exercise 4

Goldberg is also using this pattern in ascending motion with descending arpeggio's (for instance in ex. 14) and the other way around.



#### *Exercise 4*

Another way of using arpeggio's is by starting on the fifth and then playing a downward arpeggio from the seventh. When played in an eighth note rhythm you get a five note pattern with which you can easily create a cross-rhythm again. Goldberg is playing a pattern like this in example 16.



#### *Exercise 5*

Another interesting pattern that Goldberg is using (in ex. 11) is descending four note arpeggio's with a leading tone in a sixteenth note rhythm. This creates five note sixteenth note patterns which create a cross-rhythm played over a four four metre. The exercise is simply playing this pattern over



a certain scale with diatonic arpeggio's.

#### *Exercise 6*

After practicing these exercises in all keys and using different scales the challenge is to be able to use them over chords changes and switching scales quickly while keeping the pattern intact. One

way I tried to do this is by playing the different pattern types over II-V-I progressions switching to the altered scale on the dominant chord. Of course there are endless ways to vary with these patterns again, so this is only one option.



### *Exercise 7*

#### **Exercises for motivic development**

Thinking of exercises for motivic development in general is not an easy task, especially in a way in which Goldberg is using this. This is because of the fact that there isn't really a certain way in which he is generally developing motifs. Also I didn't want to copy exercises that are available online and in books for learning the traditional techniques of motivic development such as inversion, retrograde and transposition because I want the exercise to be directly linked to Goldberg's playing. I did manage to find an important strategy which is practicable that occurs a lot in the transcriptions, one where he plays a motif after which he plays an improvised line ending on the motif in a sequence (as in examples 22, 33 and 34). So the exercises will focus on this particular technique.

In exercise eight you think of a motif and the sequence of the motif beforehand. After you've decided on the motifs you try to improvise phrases ending on the motif and its sequence. At first I practiced this in a modal context so just on one scale. The example uses the C major scale again.



### Exercise 8

This exercise can also be done with another kind of development of the motif, for instance the motif in inversion, in retrograde, or retrograde inversion. Using the examples below as a basis.



### Exercise 9

After practicing this kind of exercises in a modal context, it can also be done over II-V-I's using altered or octotonic scales on the dominant chord to approach the development of the motif. The example below shows some improvised lines over the dominant chord leading to the same motives and development as in the example above with the addition of the sequence used in exercise eight.

The image displays four staves of musical notation, each representing a different exercise variation. All staves are in 4/4 time and feature a Dm7, G7(b9), and Cmaj7 chord progression. The notation includes various rhythmic patterns, rests, and triplets.

- Staff 1:** Dm7 (4 measures), G7(b9) (4 measures), Cmaj7 (4 measures). The melody consists of eighth and quarter notes.
- Staff 2:** Dm7 (4 measures), G13(b9) (4 measures), Cmaj7 (4 measures). The melody includes a quarter rest in the first measure of the Dm7 section.
- Staff 3:** Dm7 (4 measures), G7(b9) (4 measures), Cmaj7 (4 measures). The G7(b9) section features a triplet of eighth notes.
- Staff 4:** Dm7 (4 measures), G7 (4 measures), Cmaj7 (4 measures). The G7 section features a triplet of eighth notes. The exercise concludes with a double bar line and a repeat sign.

### Exercise 10

Needless to say, these exercises can be done with different kinds of scales in all keys in a modal context and in all keys and in minor as well when doing the exercises over the II-V-I's. The amount of motives one can come up with is endless so these exercises offer a lifetime of practice material.

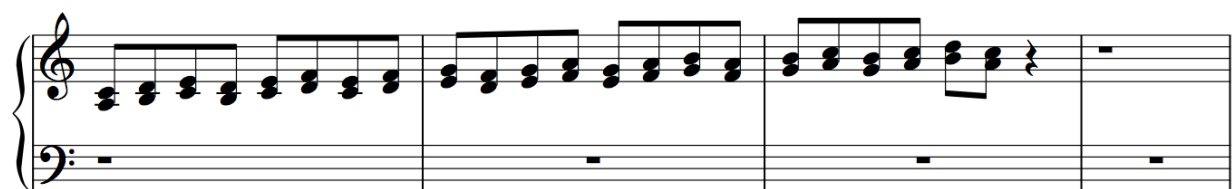
### Exercises for lines in intervals

This device is used by Goldberg in sixths, thirds and tenths and mostly in scale or arpeggio-like patterns. So at first one should get a solid foundation of playing scales and arpeggio's in this way. In exercise eleven some basic exercises for doing this are shown in the key of C major, of course they have to be played in all other keys and in minor as well.

The image displays four systems of musical notation, each consisting of a grand staff (treble and bass clefs) in 4/4 time. The first system shows a continuous eighth-note scale in the right hand and a continuous eighth-note scale in the left hand, with the right hand starting on C4 and the left hand on C3. The second system shows a continuous eighth-note scale in the right hand and a continuous eighth-note scale in the left hand, with the right hand starting on C4 and the left hand on C3. The third system shows a continuous eighth-note scale in the right hand and a continuous eighth-note scale in the left hand, with the right hand starting on C4 and the left hand on C3. The fourth system shows a continuous eighth-note scale in the right hand and a continuous eighth-note scale in the left hand, with the right hand starting on C4 and the left hand on C3.

### *Exercise 11*

When this is practiced thoroughly you can add some variations.



### *Exercise 12*

When these patterns are mastered it is time to practice the device in a more practical way. Aaron Goldberg likes to use the arpeggio's in tenths a lot at the end of a line played with his only his right hand. This can be practised by improvising a simple phrase ending on a predetermined arpeggio which you can start dubbeling with your left hand a tenth below. This device works best in combination with arpeggio's that create some rhythmic tension (as Goldberg also does in example 35), for instance by playing a triplet rhythm in groups of four. Some examples are shown in the exercise below.

The image displays three systems of musical notation for Exercise 13, set in 4/4 time. Each system consists of a grand staff (treble and bass clefs) and is divided into three measures corresponding to the chords Dm7, G7, and Cmaj7.

- System 1:**
  - Measure 1 (Dm7):** Treble clef has a quarter rest followed by an eighth-note triplet (F4, G4, A4). Bass clef has a whole rest.
  - Measure 2 (G7):** Treble clef has an eighth-note triplet (B4, C5, D5). Bass clef has a whole rest.
  - Measure 3 (Cmaj7):** Treble clef has an eighth-note triplet (E5, F5, G5). Bass clef has an eighth-note triplet (F4, E4, D4).
- System 2:**
  - Measure 1 (Dm7):** Treble clef has an eighth-note triplet (F4, G4, A4). Bass clef has a quarter rest followed by an eighth-note triplet (F4, G4, A4).
  - Measure 2 (G7):** Treble clef has an eighth-note triplet (B4, C5, D5). Bass clef has an eighth-note triplet (B4, C5, D5).
  - Measure 3 (Cmaj7):** Treble clef has a whole note (C5). Bass clef has a whole rest.
- System 3:**
  - Measure 1 (Dm7):** Treble clef has an eighth-note triplet (F4, G4, A4). Bass clef has a quarter rest followed by an eighth-note triplet (F4, G4, A4).
  - Measure 2 (G7):** Treble clef has an eighth-note triplet (B4, C5, D5). Bass clef has an eighth-note triplet (B4, C5, D5).
  - Measure 3 (Cmaj7):** Treble clef has a whole note (C5). Bass clef has a whole rest.

### Exercise 13



In examples 36 and 19 from the transcriptions Goldberg uses the chromatic and the octotonic scale played in thirds. This is also nice to practice, when you are able to play this at a pretty high speed, it can be used a a powerful effect.



#### *Exercise 14*

## Conclusion

In this research I tried to zoom in on five improvisational devices Aaron Goldberg uses a lot in his solo's and describe the way he uses them. Furthermore I tried to incorporate them into my own playing not just by learning to play the transcriptions but by using the concept of the individual devices as a starting point to think of my own exercises with which I can (hopefully) use them in my own playing in a natural way. After the entire research process I think I can conclude this was quite a good strategy. Although I'm not near the level at which Goldberg is able to use them in his playing and I could practice and master my own exercises a great deal more, I think I learned to incorporate these concepts into my playing to some degree without sounding too much like a Aaron Goldberg copycat.

The answer to the research question 'How can I emulate characteristic devices from Goldberg's playing style (when playing standards) and apply these to my own playing?' should therefore in my opinion be: By making transcriptions, study the way Goldberg is using the devices, think of exercises to get them into my own playing, practice the exercises and afterwards try to use the devices while playing a solo on a standard.

One could argue that by only focussing on five devices that Goldberg uses and making up your own exercises to master these you won't get a full grasp of his playing style. I would argue that that isn't a problem because I'm not trying to play exactly as Goldberg is doing, I'm trying to learn four concepts that occur a lot in his improvisations and incorporate these into my own playing while not losing my own personality as a jazz improviser. In my opinion this is the best way to study jazz, learn whatever you can from the greats but then try to make it your own.

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